General

Title

Adult trauma care: percentage of all EMS records for injured patients 18 years and older with documentation of intubation attempted prior to arrival in hospital.

Source(s)

Guide to quality indicators in adult trauma care. Version 3. Calgary (AB): Quality of Trauma in Adult Care, University of Calgary; 2013 Jan 29. 129 p. [111 references]

Measure Domain

Primary Measure Domain

Related Health Care Delivery Measures: Use of Services

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of all emergency medical services (EMS) records for injured patients 18 years and older with documentation of intubation attempted prior to arrival in hospital (per 100 patients).

Note: See the related National Quality Measures Clearinghouse (NQMC) summaries of the Quality of Trauma in Adult Care (QTAC) Invasive Prehospital Procedure Documentation Rate measures.

This measure belongs to a subset of measures designed to monitor the rate of high-risk low-volume invasive prehospital procedures attempted, successfully performed and associated complications. For each of the following four procedures, three measures will be calculated: i) number of documented attempted procedures per 100 patients, ii) number of documented successful procedures per 100 patients and iii) number of documented complications per 100 patients:

Intubation (NQMC-9672; NQMC-9673; NQMC-9674)
Cricothyroidotomy (NQMC-9675; NQMC-9675; NQMC-9677)
Needle decompression thoracostomy (NQMC-9678; NQMC-9679; NQMC-9680)
Defibrillation (NQMC-9681; NQMC-9682; NQMC-9683)

Rationale

Each year, injuries affect 700 million people worldwide and result in more than five million deaths. In many countries, injuries are the leading cause of death among those under the age of 45 years. The human and societal burden is even greater with many survivors never returning to school, work or their "regular" lives.

Health care services provide patients with treatment for what is a major cause of morbidity and death. Yet medical errors and substandard care threaten trauma care. Half of all patients with major traumatic injuries do not receive recommended care, medical errors are common in critically ill trauma patients and preventable trauma deaths in hospital are widely reported. The World Health Organization (WHO), professional trauma organizations (e.g., American College of Surgeons [ACS], Trauma Association of Canada and Royal Australasian College of Surgeons) and accreditation bodies have promoted efforts to improve the quality of care delivered to injured patients. However, before the quality of injury care can be improved, it needs to be measured using reliable and valid measures of health care quality.

These indicators can be used to assess patient safety, and to evaluate and improve quality of care by incorporating these measures into local, regional or national quality improvement efforts. Implementing a consistent approach to measurement (same indicators, same definitions, same data elements, same reporting format) would provide institutions with reliable performance data that is necessary for surveillance (e.g., tertiary survey completion), to track local problems (e.g., adverse events – specifically missed injuries), evaluate the effects of interventions or program changes (e.g., tertiary survey protocol) and provide comparisons across centers (e.g., benchmarking adverse events using programs such as the ACS's Trauma Quality Improvement Program). Well-designed, carefully evaluated and appropriately implemented quality indicators (QIs) may be essential tools for guiding efforts to improve health and healthcare.

This indicator belongs to a subset of measures intended to monitor the rate of high-risk low-volume invasive prehospital procedures attempted, successfully performed and associated complications.

Evidence for Rationale

Guide to quality indicators in adult trauma care. Version 3. Calgary (AB): Quality of Trauma in Adult Care, University of Calgary; 2013 Jan 29. 129 p. [111 references]

Primary Health Components

Trauma care; injury; invasive prehospital procedure; intubation

Denominator Description

All emergency medical services (EMS) contacts for injured patients age 18 years and older

Numerator Description

All emergency medical services (EMS) records for patients 18 years and older with documentation of intubation attempted prior to arrival in hospital

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and organizational sciences

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

In a study conducted by Rosengart et al. (2007), 100% Delphi panel participants ranked documenting indications for select prehospital interventions as very important (Rosengart et al., 2007). Rosengart et al. (2007) also reported an inconclusive association between the quality indicator and mortality.

Evidence for Additional Information Supporting Need for the Measure

Rosengart MR, Nathens AB, Schiff MA. The identification of criteria to evaluate prehospital trauma care using the Delphi technique. J Trauma. 2007 Mar;62(3):708-13. PubMed

Extent of Measure Testing

Using a modification of the RAND/University of California, Los Angeles (UCLA) Appropriateness Methodology, a panel of 19 injury and quality of care experts serially rated and revised quality indicators identified from a systematic review of the literature and international audit of trauma center quality improvement practices. The quality indicators developed by the panel were sent to 133 verified trauma centers in the United States, Canada, Australia, and New Zealand for evaluation.

A total of 84 quality indicators were rated and revised by the expert panel over 4 rounds of review producing 31 quality indicators of structure (n=5), process (n=21), and outcome (n=5), designed to assess the safety (n=8), effectiveness (n=17), efficiency (n=6), timeliness (n=16), equity (n=2), and patient-centeredness (n=1) of injury care spanning prehospital (n=8), hospital (n=19), and posthospital (n=2) care and secondary injury prevention (n=1). A total of 101 trauma centers (76% response rate) rated the indicators (1=strong disagreement, 9=strong agreement) as targeting important health improvements (median score 9, interquartile range [IQR] 8 to 9), easy to interpret (median score 8, IQR 8 to 9), easy to implement (median score 8, IQR 7 to 8), and globally good indicators (median score 8, IQR 8 to 9).

Thirty-one evidence-informed quality indicators of adult injury care were developed, shown to have content validity, and can be used as performance measures to guide injury care quality improvement practices.

Trauma centers rated the indicator "percentage of all emergency medical service (EMS) records for injured patients 18 years and older with documentation of intubation attempted prior to arrival in hospital" as targeting important health improvements (median score 8, IQR 8 to 9), easy to interpret (median score 8, IQR 7 to 9), easy to implement (median score 7, IQR 6 to 9), and globally a good indicator (median score 8, IQR 7 to 9).

Evidence for Extent of Measure Testing

Santana MJ, Stelfox HT, Trauma Quality Indicator Consensus Panel. Development and evaluation of evidence-informed quality indicators for adult injury care. Ann Surg. 2014 Jan;259(1):186-92. [35 references] PubMed

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Emergency Medical Services

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Single Health Care Delivery or Public Health Organizations

Statement of Acceptable Minimum Sample Size

Unspecified

Target Population Age

Age greater than or equal to 18 years

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Priority

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Not within an IOM Care Need

IOM Domain

Not within an IOM Domain

Data Collection for the Measure

Case Finding Period

Unspecified

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Clinical Condition

Encounter

Patient/Individual (Consumer) Characteristic

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions
All emergency medical services (EMS) contacts for injured patients age 18 years and older

Exclusions
Unspecified

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions
All emergency medical services (EMS) records for patients 18 years and older with documentation of intubation attempted prior to arrival in hospital

Exclusions
Unspecified

Numerator Search Strategy

Encounter

Data Source

Other

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

Unspecified

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Does not apply to this measure (i.e., there is no pre-defined preference for the measure score)

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

Invasive prehospital procedure documentation rate: intubation.

Measure Collection Name

Quality Indicators in Adult Trauma Care

Measure Set Name

Prehospital Indicators

Measure Subset Name

Invasive Prehospital Procedure Documentation Rate

Submitter

Quality of Trauma in Adult Care (QTAC) Team, University of Calgary - Academic Institution

Developer

Quality of Trauma in Adult Care (QTAC) Team, University of Calgary - Academic Institution

Funding Source(s)

The project was supported by a Partnerships in Health System Improvement Grant (PHE-91429) from the Canadian Institutes of Health Research and Alberta Innovates Health Solutions. Funding sources had no role in the design, conduct, or reporting of this study.

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Financial Disclosures/Other Potential Conflicts of Interest

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Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2013 Jan

Measure Maintenance

Unspecified

Date of Next Anticipated Revision

Unspecified

Measure Status

This is the current release of the measure.

Measure Availability

Source available from the Quality of Trauma in Adult Care (QTAC) Web site .

This work is also available from the Annals of Surgery Web site : Santana MJ,

Stelfox HT, Trauma Quality Indicator Consensus Panel. Development and evaluation of evidence-informed quality indicators for adult injury care. Ann Surg. 2014 Jan;259(1):186-92.

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NQMC Status

This NQMC summary was completed by ECRI Institute on May 6, 2015. The information was verified by the measure developer on July 13, 2015.

Copyright Statement

Production

Source(s)

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Readers with questions regarding measure content are directed to contact the measure developer.